

Amendments to the Claims:

1-9 (Canceled)

10. (Previously Presented) A fabrication method of a nano-tube, comprising the steps of: radiating ions onto said nano-tube; heating said nano-tube at a temperature of from 300 to 800°C.; and radiating ions onto said nano-tube thus-heated.

11. (Previously Presented) A fabrication method of a nano-tube, comprising the steps of: radiating ions onto said nano-tube; heating said nano-tube at a temperature of from 300 to 800°C., and radiating ions and an atomic state of atoms onto said nano-tube thus-heated, simultaneously.

12. (Canceled)

13. (Previously Presented) A manufacturing method of a field-emission type cold cathode, comprising an emitter containing therein nano-tubes, an insulating layer and gate electrode provided so as to surround said emitter, and an anode electrode provided on said gate electrode to thereby cause an emission of electrons from said emitter by applying a voltage to said emitter, said method comprising the steps of: introducing a gas onto said emitter; applying a voltage to one of said gate electrode, said anode electrode, and a newly provided electrode to thereby cause an emission of said electrons; ionizing said gas; and delivering ions of relatively low mass and sufficient energy onto said nano-tube thus-heated in order to produce dangling bonds along the nano-tube surface.

14. (Previously Presented) A manufacturing method of a field-emission type cold cathode, comprising an emitter containing therein nano-tubes, an insulating layer and gate electrode provided so as to surround said emitter, and an anode electrode provided on said gate electrode to thereby cause an emission of electrons from said emitter by applying a voltage to said emitter, said method comprising the steps of; introducing a gas onto said emitter; applying a voltage to one of said gate electrode, said anode electrode, and a newly provided electrode to thereby cause an emission of said electrons; ionizing said gas; radiating said ionized gas onto said nano-tubes; and oxidizing said nano-tubes.

15 - 27 (Canceled)

28 - 30 (Canceled)